

REMARKS

Claims 8-13 are pending. Claims 1-7 were previously cancelled. Claim 8 has been amended. Claim 13 is new. No new matter has been introduced. Reexamination and reconsideration of the application are respectfully requested.

In the Final Office Action dated March 18, 2009 (hereinafter referred to simply as the "Office Action"):

1. Claims 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (U.S. Pat. No. 6,181,796) and Krochmal et al. (U.S. Pub. No. 2004/0008848) and Hoover et al. (U.S. Pub. No. 2002/0131611).
2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (U.S. Pat. No. 6,181,796) and Krochmal et al. (U.S. Pub. No. 2004/0008848) and Hoover et al. (U.S. Pub. No. 2002/0131611) and further in view of Weinrich et al. (U.S. Pat. No. 6,263,083).

As discussed in more detail hereinbelow, the above rejections are respectfully traversed with respect to all of the presently pending claims.

Response to Rejections

Independent claim 8, as amended, recites:

A speaker array system comprising:

N driving circuits, N being an integer equal to or greater than 4; and

a plurality of N speakers arranged in an array, each of the N speakers making up plural pairs of speakers, each pair of speakers comprising a first speaker and a second speaker, each first speaker being positioned adjacent to the second speaker in the pairs of speakers, *each of the N speakers having two terminals, one of the two terminals being coupled to a corresponding one of the N driving circuits and the other of the two terminals being connected*

together so that $N + 1$ wirings are utilized in the speaker array system, wherein in each pair of speakers, the one terminals coupled to the driving circuits have opposite polarity, and the first speaker receives a first driving signal at the one terminal from the corresponding one of the N driving circuits and outputs a first current signal at the other terminal, and the second speaker receives a second driving signal, having an inverse phase and a predetermined delay relative to the first driving signal, at the one terminal from the corresponding one of the N driving circuits and outputs a second current signal at the other terminal so that a magnitude of a sum of the first current signal and the second current signal is determined by a magnitude of the predetermined delay.

In the Office Action, the Examiner states that Johnson fails to disclose “wherein the two terminals being connected together so that $N + 1$ wirings are utilized in the system.” (*Office Action*, p. 3.) Applicants agree that Johnson does not disclose, teach, or suggest “*that $N + 1$ wirings are utilized in the speaker array system.*”

In order to overcome that particular deficiency of Johnson, the Examiner relied upon Krochmal, which the Examiner cites as disclosing “a similar concept wherein the two terminals being connected together so that certain wiring are utilized (fig. 1 (19); fig. 3 (19); par [0017]/plurality of terminals interconnected and wiring).” (*Office Action*, p. 3.) However, Applicants respectfully submit that independent claim 8, as amended, does not recite that the two terminals [of a speaker] are connected together so that $N + 1$ wirings are utilized. Instead, independent claim 8, as amended, recites “*each of the N speakers having two terminals, one of the two terminals being coupled to a corresponding one of the N driving circuits and the other of the two terminals being connected together so that $N + 1$ wirings are utilized in the speaker array system.*”

Krochmal discloses that both terminals 19 of a speaker are selectably connected to either an output of an amplifier 15 or a signal sensing amplifier 37 outputting a speaker detection signal. (*Krochmal*, ¶ [0017].) However, neither of the speaker terminals disclosed in Krochmal

are connected to another speaker's terminals. Although Fig. 1 of Krochmal illustrates multiple speakers and Paragraph [0017] states that Fig. 3 shows only one speaker for clarity, Krochmal does not suggest the limitation of *"the other of the two terminals being connected."* In other words, the limitation of *"the other of the two terminals being connected"* can only be realized in the case where two or more speakers are provided in such a way that one of the speaker terminals for the respective speakers is coupled to a corresponding driving circuit and the other of the speaker terminals for the respective speakers is connected to the other terminal of another speaker. Furthermore, the Examiner states that "the combined teaching of Johnson and Krochmal et al. as a whole, fail to disclose the specific wherein that $N + 1$ wirings are utilized." (*Office Action*, p. 4.) Hence, Johnson and Krochmal do not disclose, teach, or suggest *"each of the N speakers having two terminals, one of the two terminals being coupled to a corresponding one of the N driving circuits and the other of the two terminals being connected together so that $N + 1$ wirings are utilized in the speaker array system."*

In the Office Action, the Examiner also states that the "concept wherein specifically $N + 1$ wirings are utilized is simply the designer's need with no unexpected result produced." (*Office Action*, p. 4.) Applicants respectfully disagree. As disclosed in the specification of the present application on p. 9, lines 1-7, the driving signals of the array driving system can be supplied to respective speaker units via one wiring, and the earth wire can be used in common to all speaker units. Therefore, only $(n+1)$ wirings are required for n speaker units, and the number of wirings is reduced compared to the conventional wiring arrangements. This is not simply the "designer's need with no unexpected result produced."

The Examiner also states that the combined teaching of Johnson and Krochmal, as a whole, fail to disclose "of the specific wherein the N driving circuits being an integer equal to or

greater than 4.” (*Office Action*, p. 5.) In order to overcome this deficiency of Johnson and Krochmal, the Examiner cites Hoover as disclosing a “similar concept wherein having such N driving circuits being an integer equal to or greater than 4 (fig. 2 (24-32); fig. 3; par [0017-0018]-in addition to left and right the rear left and rear right is envisage/driving circuits of multiple in pairs).” (*Office Action*, p. 5.) Even assuming, *arguendo*, that Johnson and Krochmal disclose what the Examiner alleges, which Applicants do not agree, Applicants respectfully submit that it would not have been obvious for one having ordinary skill in the art to have modified the combination of Johnson and Krochmal based on Hoover.

Hoover discloses audio surround sound power management switching in which plural speakers 24, 25, 26, 27, 28, and 32 are arranged at a listening point. In order to realize the audio surround sound with the Hoover system, the plurality of speakers must be arranged in this particular manner. If the speakers are arranged instead in a two-dimensional array, then the speakers cannot provide the audio surround sound. Consequently, a person having ordinary skill in the art would not have been motivated to arrange the speakers of Hoover in the two-dimensional array.

Accordingly, independent claim 8, as amended, distinguishes over Johnson, Krochmal, and Hoover, either alone or in combination. Therefore, Applicants respectfully request that the rejection of claim 8 be withdrawn.

Claims 10-12 depend directly from claim 8, as amended. As such, it is respectfully submitted that claims 10-12 also distinguish over the cited art for at least the same reasons as those noted above in connection with claim 8. The Applicant therefore respectfully requests that the rejection of claims 10-12 also be withdrawn.

Claim 9 depends directly from claim 8, as amended. As such, it is respectfully submitted that claim 9 also distinguishes over the cited art for at least the same reasons as those noted above in connection with claim 8. In addition, with respect to claim 9, Weinreich does not rectify the shortcomings of Johnson, Krochmal, and Hoover. The Applicant therefore respectfully requests that the rejection of claim 9 be withdrawn.

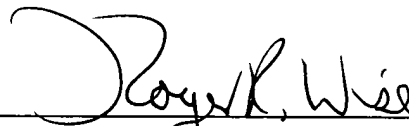
New independent claim 13 recites limitations that distinguish over Johnson, Krochmal, and Hoover. The Applicant therefore respectfully requests that claim 13 be allowed

It is believed that claims 8-13 are in condition for allowance. If, for any reason, the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,
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Date: September 18, 2009

By: _____


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